

# VU Research Portal

## The pre-commitment advantage of having a slow legislative system

Frijters, P.; Tieman, A.F.

2001

### **document version**

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### **citation for published version (APA)**

Frijters, P., & Tieman, A. F. (2001). *The pre-commitment advantage of having a slow legislative system*. Tinbergen Instituut.

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

# The pre-commitment advantage of having a slow legislative system.

**Paul Frijters\*** and **Alexander F. Tieman<sup>†</sup>**

September 6, 2010

## **Abstract**

In this paper we argue that the pre-commitment of legislation caused by the slowness of the democratic legislative system can yield a self-interested government to still choose the socially desirable policies. A simple model illustrates this point.

Key-words: time-inconsistency, legislation, irreversible investments.

Jel-codes: D70, E61, F41, K40

## **1 Introduction and argumentation**

Conventional wisdom has it that one of the major disadvantages of the democratic legislative system, compared for instance with dictatorial legislation, is that it takes

---

\*Free University Amsterdam and Tinbergen Institute. Faculty of Economics, De Boelelaan 1105, 1081 HV Amsterdam, The Netherlands. Email: pfrijters@econ.vu.nl.

<sup>†</sup>Corresponding author. Free University, Department of Econometrics and De Nederlandse Bank, Research Department, P.O.Box 98, 1000 AB Amsterdam, The Netherlands. Email: a.f.tieman@dnb.nl.

very long for any major intended change in the law to go through all the different procedures and to be effectuated (see Olsen, 1982). An example of when this lethargy leads to inferior outcomes is that tax evaders exploiting loopholes in current laws often have at least a year to close down their interests from the loopholes in the current law and to start exploiting the loopholes in an intended future law. Other instances where the legislative system is involved in a rat-race with anticipating adversaries abound.

In this paper it is argued that this lethargy of the democratic legislative system can also be an advantage. Often the purpose of a law is to allow individuals to commit to an agreement whereby laws make such commitment credible. For instance, a buyer who has a contract in which he receives some item before payment is implicitly threatened by the judicial system if he reneges on his contractual promise to pay for the goods he has received. The credible threat from contracting laws then avoids expensive alternative ways of trading without such a contracting possibility. If laws would be a matter of continuous and instant renegotiation, this implicit threat would be much weaker, because it may be time inconsistent.

In cases of time-inconsistency, a continuous possibility of voting on a law and having it instantly effectuated would lead to an inferior outcome. The lethargy of the legislative system then provides a way for the legislature to pre-commit on the current set of laws for the time-period that it would take to draw up, vote on and effectuate a new set of laws. This lethargy is then the essential pre-commitment device that upholds a good outcome.

This basic reasoning is illustrated by a simple model with time-inconsistency where a minimum level of lethargy is required to end up in the good outcome. In

this model, the optimal level of lethargy is higher when the actions that are affected take longer to reverse or when governments stay on longer. The latter may seem somewhat counter-intuitive and arises because when the length of lethargy is longer than the time in power of a government, no government will benefit from starting a legislative change as it will not be effectuated during its period of government. Then, current laws are credible.

Lethargy itself is not endogenized in the model, but one can think of many ways in which lethargy can be made greater or smaller, e.g. by having required consultation periods on intended laws and various requirements on different stages an intended law must pass, which may differ according to the purpose of the law.

There are several links with existing literature. On the one hand, there are studies documenting the lethargy of various legislative institutions and possible cures for it (see e.g. Olsen, 1982). The need for pre-commitment is well-recognized in dynamic models where time-inconsistency of policies is an issue (e.g. Asheim, 1997). The lack of pre-commitment and its consequences is a theme in models of political economy where specific redistributive programs are involved (see Mulligan and Sala-i-Martin, 1999, or Tabellini, 2000, and the references therein). These considerations are reflected for instance in the debate on the independence of central banks as a way of making monetary policy credible (e.g. Rogoff, 1989). As far we know, however, no author in political economy has yet linked legislative lethargy to beneficial pre-commitment.

## 2 An illustrative model

We present a continuous-time investment model where foreign investors are invited to invest capital and hire labour in a country. Consider a small open economy with at each time  $t$ ,  $t = 0, 1, 2, \dots$ , a fixed amount of immobile labour  $L_t \equiv L$  and mobile capital  $K_t$ . Marginal production at time  $t$  equals  $y(K_t, L_t)$  where  $y(., .)$  satisfies the Inada conditions. Arbitrary positive levels of investments can be made instantaneously by foreign investors. The world interest rate net of world capital taxation is  $r$ . By assumption, it takes  $t_p > 0$  amount of time for any investment to be undone by an investor, i.e., to ‘pull out’. This reflects either the physical difficulty of removing equipment and personnel or the psychic difficulty of transferring knowledge. The government, which needs money to finance a public good, can tax labour and capital with marginal tax rates  $\tau_t^L$  and  $\tau_t^C$ . The time-length of legislative lethargy is determined indirectly by a constitution and equals  $\gamma$ .

Suppose further that the individuals manning the government change now and then through a democratic process. This means that it is essentially impossible for any current government to build up much credibility towards foreign investors (who don’t vote) by sticking to any announced election program. Hence governments are in power for a length of time equal to 1 and maximize the expected utility in that period (in which they may give great weight to their own utility). If different policies lead to the same utility while in office, we assume governments legislate that policy that has the highest future expected utility.<sup>1</sup> Marginal utility at time  $t$  is defined as

---

<sup>1</sup>This corresponds to an assumption of minimal benevolence. It is the minimal assumption necessary to ensure that there is an initial government whose first law will coincide in this model with the long-run optimal law. Without this assumption, any first or successive government will not set any legislation in motion if  $\gamma > 1$ .

$$\begin{aligned}
\frac{dU_t}{dt} &= u_t = f(y(K_t, L_t)) + g(Lw\tau_t^L + K_tr_t(K_t, L_t)\tau_t^C) \\
\text{s.t.} \quad w &= \frac{\partial y(K_t, L_t)}{\partial L_t} \\
r_t(K_t, L_t) &= \frac{\partial y(K_t, L_t)}{\partial K_t}
\end{aligned}$$

where  $f(\cdot)$  denotes a consumption function of total production;  $g(\cdot)$  denotes a positive and increasing net-benefit function of public good provision;  $K_t$  is used capital of foreign investors;  $w$  is the marginal productivity of labour and  $r_t(K_t, L_t)$  is the marginal productivity of capital, which is a function of both  $K_t$  and  $L_t$ . The equilibrium level of capital is determined by the maximizing behaviour of foreign investors. We denote the foreign investor's expectations at time  $t - t_p$  with respect to the level of capital taxation  $\tau_t^C$  prevailing at time  $t$  by  $\mathbb{E}_{t-t_0}\tau_t^C$ . In a rational expectations equilibrium it should hold that  $(1 - \mathbb{E}_{t-t_0}\tau_t^C)r_t(K_t, L_t) = r$ , i.e. the net interest level in this country should equal world interest rates  $r$ . Since  $L_t$  is given to equal  $L$  at each time  $t$ , this expression can be solved for  $K_t$ . Denote the inverse of the function  $r_t(\cdot, \cdot)$  with respect to its first argument, while keeping its second argument fixed at  $L$  by  $r_t^{-1}(\cdot)$ . Thus  $K_t$  solves

$$K_t = I_{\{\mathbb{E}_{t-t_0}\tau_t^C < 1\}} r_t^{-1}\left(\frac{r}{1 - \mathbb{E}_{t-t_0}\tau_t^C}\right),$$

where the indicator function  $I_{\{\mathbb{E}_{t-t_0}\tau_t^C < 1\}}$  indicates that no investments will be made unless capital tax is strictly less than 100%. The domestic government inherits a level of capital taxation. The first government (at  $t = 0$ ) can set a level of capital taxation before investments start.

When  $\gamma = 0$ , we are in a standard prisoner-dilemma situation, whereby a government views the amount of capital invested at time  $t$  as given (because investments are dependent on anticipated tax rates, not actual taxes) and re-legislates the capital tax rate to be 1 at the end of its term and (by backward induction) each time before that. Anticipating this, actual investment is 0 at each time independent of the interest rate. Even the short-term maximizing government would have wished it was able to pre-commit to a different capital tax level.

A government interested in the long-term, i.e., in the average utility over all periods, would set labour tax equal to 1 because we have abstracted from any labour supply issues or aggregate demand issues in this set-up. Capital tax would be set at a constant level such that the marginal benefit of further capital taxation is zero, which is when

$$\begin{aligned}
\frac{\partial u_t}{\partial \tau_t^C} &= \frac{\partial}{\partial \tau_t^C} f(y(K_t, L)) + \frac{\partial}{\partial \tau_t^C} g(L_t w_{Lt} \tau_t^L + K_t r_t \tau_t^C) = \\
&= \frac{\partial K_t}{\partial \tau_t^C} \frac{\partial y(K_t, L)}{\partial K_t} \frac{df(x)}{dx} \Big|_{x=y(K_t, L)} + \frac{\partial}{\partial \tau_t^C} (L_t w_{Lt} \tau_t^L + K_t r_t \tau_t^C) \frac{dg(x)}{dx} \Big|_{x=L_t w_{Lt} \tau_t^L + K_t r_t \tau_t^C} = \\
&= \frac{\partial K_t}{\partial \tau_t^C} r_t(K_t, L) f'(y(K_t, L)) + \left[ \frac{\partial K_t}{\partial \tau_t^C} r_t \tau_t^C + K_t \frac{\partial r_t}{\partial \tau_t^C} \tau_t^C + K_t r_t \right] g'(L_t w_{Lt} \tau_t^L + K_t r_t \tau_t^C) = 0
\end{aligned}$$

whose solution we denote by  $\tilde{\tau}^C$ . We can verify that  $\tilde{\tau}^C$  is less than 1.

If a government could pre-commit for a time-length  $\gamma > \min\{t_p, 1\}$  on not changing an announced tax rate because of the lethargy in the legislative system, even the first government (at  $t = 0$ ), who is interested in the utility during its length of office, sets capital taxation at  $\tilde{\tau}^C$  and labour taxation at 1. Successive governments inherit this level of taxation and do not set legislation in motion to change this. Then, national utility is highest. The reason for the fact that  $\gamma > 1$  suffices irrespective of  $t_p$  is that

if  $\gamma > 1$ , governments can only set a change in motion that will be effectuated after their window of interest, which they will hence not do, making the initial legislated level of capital equal the only optimal long-run level. In this extreme example where a government is only interested in the utility during its time in office, it sets the long-run optimal level of capital taxation  $\tilde{\tau}^C$ .

### 3 Conclusion

This paper makes a simple point which is that the lethargy of the legislative system can form a beneficial pre-commitment device in circumstances of time-inconsistent optimal policy. This implies that especially if reputation is of little value to politicians, for instance because they are only in power for a short period, the lethargy of the legislative system provides a protection for long-term interests. Anticipating this, beneficiaries of this form of commitment, such as foreign investors, are more attracted to countries with more lethargic legislative systems. The more lethargic, the more irreversible investments they can make without the fear of appropriation through a tax system.

### References

1. Asheim, G.B. (1997), ‘Individual and collective time-consistency’, *Review of Economic Studies* 64, 427-43.
2. Mulligan, C., and Sala-i-Martin, X. (1999), ‘Social security in theory and in practice (I): facts and political theories’, *NBER* 7118.



3. Olsen, M. (1982), *The rise and decline of nations*, Yale University Press, New Haven.
4. Rogoff, K. (1989), 'Reputation, Coordination, and Monetary Policy' in Barro, Robert-J., ed. *Modern business cycle theory*. Cambridge: Harvard University Press, pp. 236-64.
5. Tabellini, G. (2000), 'A positive theory of social security', *The Scandinavian Journal of Economics*, vol 102 (3), pp. 523-44.